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TRANSMITTAL FORM (to be used for all correspondence after initial filing)			
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		First Named Inventor	Smith, Jr., Frank C.
		Art Unit	3644
		Examiner Name	Dinh
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ENCLOSURES *(Check all that apply)*

- [ ] Fee Transmittal Form
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  - [ ] Affidavits/declaration(s)
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- [ ] Information Disclosure Statement
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- [ ] Proprietary Information
- [ ] Status Letter
- [X] Other Enclosure(s) (please identify below):

*Reply to Examiner's Answer of 12-16-05

*Copies or patents Reviewed by Rutan (19 patents)

*(In triplicate)

Remarks

It is believed that no further request for extension of time or fees are due. Notwithstanding, the Commissioner is authorized to charge any additional fees incurred or credit any overage to Deposit Account No.50-1753 (50121). Please regard this as a further request for extension of time to the extent one is needed. (Customer Account Number 22929)

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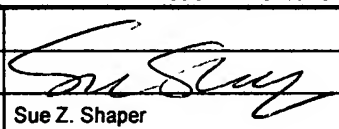
Signature			
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Smith, Jr.	Art Unit: 3644
Application No.: 10/701,146	Examiner: Tien Dinh
Filed: 11/4/2003	
Title: Cargo Oriented Aircraft	
Attorney Docket No.: 50121	

Commissioner for Patents

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REPLY TO EXAMINER'S ANSWER OF 12/16/05

(In Triplicate)

Motivation to Combine

Re Rutan. The Examiner asserts (Answer page 4 lines 1-2) that, "Rutan was used to show that canards in a similar aircraft [i.e. similar to Sutton's "flying wing" or to a craft with no empennage] to (sic) increase the stability and maneuverability." No specific column or line from Rutan documents this assertion. Applicant respectfully traverses and submits that Rutan offers no such "showing," as delineated below.

The Rutan '800 begins with:

> "High-speed aircraft, most of which are designed for supersonic flight, have been known for years that include some type of extendable so-called 'canard' wings, which upon deployment create a lift force about an aerodynamic center located forwardly of the craft's center of gravity that is capable of offsetting the nose down pitching moment that results when the primary wing system positioned behind the canard wing system is actuated to shift the neutral point aft." (Column 1 lines 5-13.)

Rutan proceeds to review 17 prior art patents having extendable/retractable canards or the like in his Background of the Invention section, columns 1-3. (Copies of the patents are supplied here for the Board's easy reference, to the extent the Board is curious.) Rutan

references in the process his own "home built" plane designs, the "VariEze" and "Long-EZ." Applicant had already disclosed these Rutan designs.

Rutan then discloses his invention. For these "identified tandem or multi-winged" craft that already include "an extendable canard wing," Rutan's invention is "sweeping the secondary wings (canards) fore and aft while leaving them deployed and effective of all times." To paraphrase Rutan '800, if one has chosen the so-called "tandem or multi-winged" (canard) design, Rutan teaches and discloses that it is beneficial to leave the canard at least partially extended throughout flight rather than fully retract the canard wing as was the practice of the prior art. Leaving the extendable canard partially extended during normal flight is asserted to influence flight characteristics yielding improved performance and stability. Rutan '800, col 3 lines 19-34.

Rutan specifically mentioned, however in, column 1 lines 47-51, that:

> "Aircraft **having only one wing with extendable portions** are known in the prior art, such as those forming the subject matter of US patent numbers 2,858,091 and 4,181,277; [copies are also attached hereto for the Board's easy reference] **however, they have no secondary wing system or canard.**"

Rutan had nothing to say about these "one wing with extendable portions" aircraft designs also known in the prior art, one way or the other. The aircraft "having only one wing with extendable portions," **which is Sutton's design,** have no canard. Rutan's invention of "leaving the canard at least partially deployed in all flight modes" had no application to these designs.

It is clear that Rutan does not teach or suggest adding a canard to aircraft designs "having only one wing with extendable portions," like Sutton. The Examiner points to none. In column 2 line 27 through column 3 line 4 Rutan lists nine advantages of "tandem or multi-winged aircraft" (canards) over "the more conventional main wing forward, tail aft (i.e. empennage) design. Rutan lists no advantages of either design (empennage or canard) over aircraft having "only one wing with extendable portions," such as Sutton. Rutan does not consider such. Rutan never compares the

advantages/disadvantages of a canard vis-à-vis a "one wing with extendable portions" (i.e. Sutton) design.

Adding a canard to Sutton would render Sutton's "extendable wing portions," and thus Sutton's inventive control system therefore, redundant. Such modification of Sutton (which is nowhere suggested in the art) destroys Sutton's invention. Adding Rutan's canard would require an extension forward of Sutton's fuselage and essentially a change from Sutton's design to Rutan's design. The Examiner does not explain why Sutton would not then also be taught to adopt Rutan's pusher engine design, which compliments Rutan's canard design.

The Rutan '800 pusher engine design is incompatible with a rear door entry. The Examiner has stated that the Examiner is not depending on the Rutan '800 as a primary reference.

To summarize, the "one wing with extendable portions" design, illustrated by Rutan's two cited references Kapenkin and Gerhardt, and also illustrated by Sutton, is clearly an alternative to "a secondary wing system or canard." Rutan contains no teaching or suggestion to favor "a secondary wing system or canard" over a "wing with extendable portions." One of ordinary skill in the art would not view Rutan as teaching adding a "secondary wing system or canard" to an aircraft already having "one wing with extendable portions." Rutan provides no motivation to add a canard to Sutton's flying wing.

Teaching Away

Re Sutton. Applicant argued that Sutton "teaches away" from adding a canard to his single wing or flying wing aircraft. The Examiner raises the question of the test for "teaching away."

The Sutton reference teaches, in reference to empennages and to canards in front of a flying wing aircraft, column 1 lines 29-44, as follows:

> "Attempts have been made in the prior art to overcome these disadvantages [i.e. a relatively large rearward shift in the center of lift of the wing when the flap is extended rearwardly and the adding to the load canard by producing a negative lift with a conventional tail surface] by the provision

> of auxiliary lifting surfaces located forwardly with respect to the center of gravity of the airplane or the center of pressure of the wing in order that this auxiliary assist the lift in the main sustaining surface, rather than add unduly unto to its load.
>
> In tail-less or flying wing types of aircraft, the use of certain type flaps have presented problems which are not readily solved as by taking advantage of the use of a conventional tail surface, and the fuselage projection forward of the wings leading edge in tail-less models is not always such as to support a forwardly disposed auxiliary lifting surface. Several efforts have been made in tail-less type airplanes to provide suitable means for balancing the diving moments created by the use of these high lift flaps, but such prior efforts have been either relatively unsuccessful, have resulted in materially complicating the design of control system or have been found objectionable for other reasons." Column 1 lines 29-50.

The Examiner admits that Sutton teaches that "there is difficulty in putting a canard in a flying wing aircraft." Answer, page 4 lines 7-8.

Sutton's is presumably selected as the primary reference because a flying wing design is without empennage. The Examiner anticipates finding motivation to add a canard to Sutton's flying wing in order to obtain "two and only two lifting surfaces," a limitation of claim 1. Sutton, however, indicates that empennages and canards have been considered and discarded in regard to flying wing designs. Sutton teaches not following that route. Applicant submits that such constitutes "teaching away." The Examiner argues, however, that the mere fact that Sutton teaches that there is difficulty in putting a canard in a flying winged aircraft "would not prevent one" skilled in the art from putting a canard in the flying wing aircraft.

The Test for Teaching Away

The test for "teaching away" is whether a person of ordinary skill, upon reading the reference, "would be discouraged" from following the Examiner's asserted path, or

"would be led in a direction divergent" from the path taken by the instant invention. See *In re Gurley* 31 USPQ 2d 1130 (Fed. Cir. 1994) See also *In re Haruna* 58 USPQ 2d 1517 (Fed. Cir. 2001) and *Tac Air, Inc. v Denso Manufacturing Michigan Inc*, 52 USPQ 2d 1294 (Fed. Cir. 1999). Applicant submits that Sutton discourages one from adding a canard to a flying wing and in fact leads one in a divergent direction, i.e. to extended flaps and a control system therefor. Neither Rutan nor Sutton, in fact, can be read as encouraging adding a secondary wing or canard to a single wing craft with extendable portions. No line of development flowing from either Rutan or Sutton is likely to reproduce applicant's invention.

Technological Achievement in General

The Examiner suggests that technological achievements between Sutton in 1945 and the filing date in 2003 overcome the problems and difficulties with canards. This position is not supported by explicit evidence. Rather, the Examiner argues in general that many aircraft that were once deemed unflyable can now be flown. The Examiner asserts that it was once considered that flying wings were unstable. The Examiner recommends considering the B2 Bomber.

Applicant submits that such arguments must fail to establish a prima face case as a matter of law.

The instant inventor retorts, with strong conviction, that if his invention were obvious, the need for such being long clear, why did not someone invent it before?! In fact, the instant inventor is well above the level of skill of one of ordinary skill in the pertinent art, and it took him a lifetime to "see" his solution.

The Examiner points out that Rutan discloses a tail-less aircraft having canards. But the Rutan's '800 design is clearly incompatible with a rear door. The Examiner offers no comment here. Rutan has designed a rear door aircraft, as Applicant previously disclosed. It incorporates a "boom supported empennage," just like Read and the other prior art rear door designs.

Additional Points

Applicant traverses the assertion that "personal aircraft," in the context of the industry and the patent's Written Description, can be interpreted to include "any aircraft

that can be used for persons" and that Sutton thus discloses a "personal aircraft." Rather, see the specification, page 5 lines 8-11, for a discussion of "personal aircraft."

The Examiner's second paragraph under "(10) Response to Argument," page 3 of the Answer, states, "please note that the applicant has not submitted any evidence or statements in the disclosure as to what 'significant' definitely means." To the contrary, on page 3 of the Appeal Brief, second quote on that page, applicant quotes from page 4 line 29 through page 5 line 3 of the Written Description which relates to the defining of significant.

The Examiner characterizes all claims as comprising three limitations. E.g. Page 3 bottom paragraph of the Answer recites:

> "The Examiner would like to point out that the claims call for an aircraft having a canard, an opening in the rear of the fuselage, and no empennage."

Applicant respectfully requests that the claims be considered as written.

Independent claim 1 recites:

- a cargo adapted aircraft
- a canard
- having two and only two significant horizontal lifting surfaces
- a smaller lifting surface in front of a larger lifting surface
- a large opening at the rear of the fuselage through which objects can be loaded
- the opening having a door type of closure for flight.

Independent claim 11 recites:

- a cargo adapted personal aircraft
- a canard having two significant horizontal lifting surfaces with a smaller lifting surface in front of larger lifting surface
- a large opening at the rear of the fuselage through which objects can be loaded
- no empennage.

Clarification

Upon reading the Appeal Brief applicant wishes to clarify a statement in the next to the bottom paragraph on page 6 of the Brief. Applicant stated there that Sutton was silent on a canard having two and only two significant horizontal lifting surfaces. That is not precise. Sutton appears to mention canards as well as empennages and to teach away from both in regard to combining such with his flying wing.

Respectfully Submitted,

1/12/6
Date

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PATENTS REVIEWED BY RUTAN